



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,554	11/24/2003	Tetsuya Satou	OGOH:089A	1824

6160 7590 09/16/2004
PARKHURST & WENDEL, L.L.P.
1421 PRINCE STREET
SUITE 210
ALEXANDRIA, VA 22314-2805

EXAMINER

YAMNITZKY, MARIE ROSE

ART UNIT	PAPER NUMBER
----------	--------------

1774

DATE MAILED: 09/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/718,554

Applicant(s)

SATOU ET AL.

Examiner

Marie R. Yamnitzky

Art Unit

1774

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06/08/04, 06/23/04, 07/06/04 & 08/06/04.
2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19-53 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☒ Claim(s) 22-42 and 48-50 is/are allowed.
6) ☒ Claim(s) 19-21, 43, 44 and 51-53 is/are rejected.
7) ☒ Claim(s) 45-47 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date rec'd 08/06/04.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. This Office action is in response to applicant's amendment and Terminal Disclaimer filed June 08, 2004, and applicant's supplemental amendment filed June 23, 2004. The supplemental amendment filed June 23, 2004 was resubmitted July 06, 2004 in response to a notice of non-compliance for the June 8th amendment. The notice of non-compliance crossed in the mail with the original supplemental amendment. The examiner notes that the claim changes set forth in the June 23rd/ July 6th amendment are marked relative to the claim language in the June 8th amendment.

Claims 19, 22, 28 and 40 have been amended.

Claims 19-53 are pending.

2. The terminal disclaimer filed on June 08, 2004, disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of U.S. Patent No. 6,682,832 B2 has been reviewed and is accepted. The terminal disclaimer has been recorded. Accordingly, the obviousness-type double patenting rejections set forth in the Office action mailed February 09, 2004 are overcome.

3. The rejection of claims 19 and 40 under 35 U.S.C. 112, 2nd paragraph, as set forth in the Office action mailed February 09, 2004, is overcome by applicant's amendments.

4. Claim 19 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim contains subject matter which was not described in

the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The compounds of formula (1) as defined in the original disclosure required Y to represent an aryl group containing five or more conjugated bonds. The aryl group represented by Y as defined in present claim 19 is not required to have five or more conjugated bonds.

Support in the original disclosure for the scope of compounds represented by formula (1) as defined in present claim 19 is not clear.

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

6. Claim 19 is rejected under 35 U.S.C. 102(e) as being anticipated by Kawamura et al. (US 6,541,129 B1).

Kawamura et al. disclose compounds for use in the hole transporting zone of an organic EL device. As taught at column 3, lines 35-42, a light emitting layer may be the hole transporting zone in some cases. As taught in the paragraph beginning at c. 107, l. 56, compounds represented by general formula (III) comprising an aryl group having a styryl group have a high fluorescent property and can be used as a light emitting material. General formula (III) is shown in column 4. The compound of formula PD-56 as shown in c. 37-38 (also shown in c. 107-108 as PD-56') is a compound of general formula (III) comprising an aryl group having a styryl group.

The compound of formula PD-56/PD-56' is a compound of formula (1) as defined in present claim 19 in which each of Ar1 and Ar2 represents an unsubstituted aryl group (specifically, a phenyl group), Ar3 represents an unsubstituted phenylene group, X represents a substituent containing two carbon rings and non-planarly bonding to a diphenylamine portion (specifically, a group of formula (2) as shown on page 17 of the present specification in which each of R1 and R2 represents a hydrogen atom), and Y represents a substituted aryl group (specifically, a substituted phenyl group) substituted with an electron-donating substituent.

The present application claims foreign priority of two Japanese applications, one of which was filed prior to the 102(e) date of the '129 patent to Kawamura et al. Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 19-21, 43, 44 and 51-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakaya et al. (US 5,792,557) in view of VanSlyke et al. (US 4,720,432).

Nakaya et al. disclose compounds meeting the limitations of a compound represented by formula (1) as defined in present claim 19 except for the requirement that Ar³ represent a phenylene group and the requirement that the aryl group represented by Y be substituted with an electron-donating substituent. For example, see the compounds represented by formulae VIII-23, VIII-38 through VIII-44, XI-5 through XI-9 and XI-39 through XI-43. These compounds correspond to compounds of formula (1) as set forth in claim 19 wherein Ar³ represents a biphenylene group, and there is no electron-donating substituent on the group represented by Y.

Nakaya et al. disclose compounds meeting the limitations of a compound represented by formula (1) as defined in present claims 20 or 21 except for the requirement that Ar³ represent a p-phenylene group (in the case of claim 20) or an m-phenylene group (in the case of claim 21). For example, see the compounds represented by formulae VIII-23, VIII-34, VIII-38 through VIII-44, XI-5 through XI-9 and XI-39 through XI-43. These compounds correspond to compounds of formula (1) as set forth in claims 20 and 21 wherein Ar³ represents a biphenylene group.

Nakaya et al. disclose compounds meeting the limitations of a compound represented by formula (13) as defined in present claim 43, with claim 44 dependent therefrom, except that Nakaya's compounds have a biphenylene group rather than a phenylene group linking the two nitrogens. For example, see the compounds represented by formulae XI-7 through XI-9 and XI-39 through XI-43.

Nakaya et al. disclose a compound meeting the limitations of a compound represented by formula (15) as defined in present claim 51, with claims 52 and 53 dependent therefrom, except that Nakaya's compound has a biphenylene group rather than a phenylene group linking the two nitrogens. See the compound represented by formula XI-5.

Nakaya's compounds have hole injecting and transporting properties and may be used in the luminescent layer of an organic EL device. Nakaya's compounds have two diarylamine substituents joined by a biphenylene group whereas the compounds of present claims 19-21, 43, 44 and 51-53 have two diarylamine substituents joined by a phenylene group.

VanSlyke et al. disclose organic EL devices and teach that compounds having hole transporting capabilities can be provided by compounds having two diarylamine substituents joined by an arylene group such as a phenylene moiety having 1-4 phenylene rings. For example, see column 8, lines 39-68.

One of ordinary skill in the art at the time of the invention would have been motivated to make compounds similar to the compounds disclosed by Nakaya et al. with the expectation that compounds similar in structure would have similar properties and could be used for the same purpose as Nakaya's compounds. One of ordinary skill in the art at the time of the invention,

having knowledge of the teachings of VanSlyke et al., would have reasonably expected that compounds similar to those disclosed by Nakaya et al. having a phenylene group joining two amino groups instead of a biphenylene group would have properties similar to the properties of Nakaya's compounds.

Further with respect to the compound required by present claim 19, while the specific prior art compounds referenced above do not have an electron-donating substituent directly bonded to any of the biphenyl or fused aromatic groups, compounds having further amine substituents are disclosed in the prior art. For example, see the compounds represented by formula XI-10 through XI-16. Amine substituents are electron-donating substituents. One of ordinary skill in the art would have reasonably expected that compounds similar to the compounds represented by formulae XI-5 through XI-9 or XI-39 through XI-43, for example, but having a substituent such as an amine substituent on each of the biphenyl or fused aromatic groups would be suitable for the prior art purposes since compounds containing additional amine substituents are disclosed in the prior art.

Nakaya's compound of formula XI-5 further differs from the compound required by present claim 53 in that it lacks the four methoxy substituents required by the compound of claim 53. However, given Nakaya's teachings as a whole, one of ordinary skill in the art at the time of the invention would have reasonably expected that compounds similar to Nakaya's compound of formula XI-5 having methoxy substituents at various positions on the phenyl rings would have properties similar to the compound of formula XI-5 and could be used for the same purpose. In particular, see column 13, lines 1-48.

9. Applicant's arguments filed June 08, 2004 have been fully considered but they are not persuasive.

While the present claims require the specified compound to be present in the luminescent layer of the claimed EL device, the claims do not limit the function(s) which must be provided by the specified compound. Nakaya's compounds may be used in the luminescent layer of the EL device, and have hole injecting and transporting properties. The examiner maintains the position that, based on the teachings of VanSlyke et al., one of ordinary skill in the art at the time of the invention would have reasonably expected that compounds similar to Nakaya's compounds having a phenylene group joining two amino groups instead of a biphenylene group joining two amino groups would have properties similar to the properties of Nakaya's compounds.

Applicant has not provided any objective evidence commensurate in scope with the rejected claims to demonstrate that the compounds required by the rejected claims provide superior/unexpected properties compared to Nakaya's similar compounds.

10. Claims 22-42 and 48-50 are allowed.

Claims 45-47 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Art Unit: 1774

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

12. Any inquiry concerning this communication should be directed to Marie R. Yamnitzky at telephone number (571) 272-1531. The examiner works a flexible schedule but can generally be reached at this number from 6:30 a.m. to 4:00 p.m. Monday, Tuesday, Thursday and Friday, and every other Wednesday from 6:30 a.m. to 3:00 p.m.

The current fax number for Art Unit 1774 is (703) 872-9306 for all official faxes. (Unofficial faxes to be sent directly to examiner Yamnitzky can be sent to (571) 273-1531.)

MRY
September 10, 2004



MARIE YAMNITZKY
PRIMARY EXAMINER

1774